contact locations **204**, **206**, and **208**, respectively, which actuators **224**, **226**, and **228** are responsive to actuator drive signals (waveforms) from controller **420** to produce tactile vibrations that may be felt by a user through one of contact locations **204**, **206**, and **208**. Controller **420** includes waveform generator **422**, configured to dynamically produce waveforms appropriate to provide tactile vibrations at a selected contact location, such as contact location **204**. In this example, the waveform generator **422** is configured to receive sensed data from the sensors **416** and **418** and to generate suppression waveforms to activate the actuators **226** and **228** to suppress propagating vibrations at contact locations **206** and **208**.

[0027] In an alternative example, rather then generate suppression waveforms in response to sensed data, suppression waveforms will be previously established and stored in memory **430**. In this example, waveform data **432** may be accumulated during actual operation or during a calibration operation by storing data from sensors **414**, **416**, and **418** when an actuator is activated. In this instance, the waveform data **432** can include vibration data for some or all other contact locations relative to vibrations generated by actuators beneath each other contact location. Having the benefit of this data, appropriate suppression waveforms can be pre-generated and stored in the memory. In this instance, waveform generator **422** will access memory **430** to retrieve waveform data **432** and to either generate a suppression waveform from the waveform data, or to merely use pre-generated suppression waveform to drive the appropriate actuators. For implementations where substantial consistency of vibration propagation is seen across multiple individual devices, then the calibration waveform data need not be generated on the specific device in question, but may be generated based upon one or more sample devices and used for programming of other similarly-configured devices.

[0028] In this example, contact location **204** is selected by a user (by contact or proximity) and sensor **214** provides a signal to sensor processor **410**. Sensor processor **410** then provides an "input" signal related to the selection at contact location **204** to controller **420**. In response to receiving the input signal, controller **420** will provide data related to the selection to the host system via host interface **440** and will provide a waveform to actuator **224** to produce a tactile vibration beneath contact location **204**. Additionally, preferably in response to that same input signal, controller **420** will drive actuators **226** and **228** with a suppression waveform to induce vibration at actuators **226** and **228** to suppress, by in some way altering, propagating vibrations at contact locations **206** and **208**. As previously identified, although the primary illustrative example has been the suppression of crosstalk signals by at least partially canceling them, it should be remembered that an alternative objective may be to induce suppression vibrations which merely interfere or with or otherwise alter the perceivable vibrations at contact locations other than the one of actuation to alter the user experience in ways other than canceling vibrations. For example, a suppression waveform might be generated which serves to partially cancel crosstalk signals but which also induces a higher frequency signal to establish a different tactile sensation for a user other than just that of minimized vibration. All such variations that effectively change the surface vibrations that propagate as a result of the haptic feedback signal are considered to represent "suppression" within the context of the present disclosure.

[0029] As one example of a calibration process as identified above, contact may be made with each of the contact locations, one at a time, and sensors at those locations may be used to provide signals related to such contacts to sensor processor **410**, which communicates the sensed data to controller **420**. Controller **420** activates the actuator associated with the pressed contact location. In this instance, the sensors associated with other contact locations measure the propagating vibrations and provide data related to the propagating vibrations to sensor processor **410**, which communicates the data to the controller **420** for storing related waveform data **432** in memory **430**. In an example, controller **420** applies suppression waveforms to neighboring actuators during subsequent iterations, and the calibration process is repeated iteratively, adjusting stored waveform data **432** at each iteration, until a desired suppression at each contact location is achieved. In this way, the propagating effects of both the original feedback waveform, and also of other suppression waveforms, may be considered in configuring each suppression waveform.

[0030] It should be understood that haptic feedback system **400** is one representative implementation configured to suppress propagating vibrations; however, other implementations are possible. For example, in another embodiment, sensor processor and controller can be combined. In still another embodiment, the host system can provide sensor processing and waveform generation. In an example, sensors **414**, **416**, and **418** are combined with actuators **224**, **226**, and **228**, respectively. Further, in an example, waveform data **432** can be stored in a single table or multiple tables, in a database, or in any appropriate form. Further, though the above-discussion has focused on selection of a single contact location, such as contact location **204**, the waveform data **432** may include data related to multiple simultaneous contact location selections in a multi-input implementation.

[0031] Referring now to FIG. **5**, therein is depicted a flow diagram **500** of a particular illustrative embodiment of a method of providing localized haptic feedback while suppressing vibratory crosstalk using a haptic feedback system. At **502**, an input is received that is related to a selected contact location of a plurality of contact locations at a controller of a haptic feedback system. In an example, a selection signal is received from a sensor, from a sensor processor, and/or from a selected contact location. Advancing to **504**, a first vibration is induced at the selected contact by selectively activating one or more actuators associated with the selected contact location to generate vibrations providing haptic feedback to a user.

[0032] Moving to **506**, a suppression vibration is induced at one or more other contact locations, including, in some examples, contact locations adjacent to the selected input location; the suppression vibration is configured to suppress propagating vibrations from the first vibration to effect a localization of the first vibration at the selected contact location. In an example, the propagating vibrations include a first waveform having a first amplitude and phase, and the canceling vibration includes a second waveform having the first amplitude and having a second phase configured to suppress the propagating vibrations. In the example of waveform cancellation, the suppression waveform will preferably be generated from the same contact signal as generated the user feedback signal, and will be of opposite phase from the original, but will also be adjusted in both time and amplitude to offset the crosstalk signal as delayed and attenuated by travel through the input surface. In other examples, the canceling